APPENDIX A - PENDING CLAIMS

1. A composition comprising a peptido-mimetic of a carbohydrate ligand of an adhesion molecule in a physiologically acceptable carrier.

2. The composition according to claim 1, wherein said adhesion molecule is a selectin.

3. The composition according to claim 1, wherein said ligand is a Lewis antigen.

4. The composition according to claim 3, wherein the Lewis antigen is selected from the group consisting of SA-Le^a, SA-LeX, and LeY.

5. The composition according to claim 2, wherein said adhesion molecule is E-selectin and said ligand is SA-Le^a or SA-LeX.

6. The composition according to claim 5, wherein said peptido-mimetic is selected from the group consisting of:
ASAVNLYIPTQE SEQ ID NO:84, VYLAPGRISRDY SEQ ID NO:85,
VYLAPGRFSRDY SEQ ID NO:86, CTSHWGVLSQRR SEQ ID NO:87,
RVLSPESYLGPS SEQ ID NO:88, RVLSPESYLGPA SEQ ID NO:89,
VGNGVLMGRRG SEQ ID NO:90, RVLSPESYLGPA SEQ ID NO:92,
GNCRYIGLRQFG SEQ ID NO:93, DIRVEPGGGYTH SEQ ID NO:94,
APIHTYTGRARG SEQ ID NO:96, and RHTCVRSCGHDR SEQ ID NO:97.

7. The composition according to claim 4, wherein said Lewis antigen is LeY and said peptido-mimetics are selected from the group consisting of TKRPDLIVDPIP SEQ ID NO:98, DEVRPDLISTEE SEQ ID NO:99, NLRPKYIXLDAD SEQ ID NO:100, and TLIAFADLVDVI SEQ ID NO:101.

8. The composition according to claim 4, wherein said Lewis antigen is SA-Le^a and said peptido-mimetics are selected from the group consisting of VGIWSVVSEGSR SEQ ID NO:102, RCSVGVPFTMES SEQ ID NO:103, QDGVWEHVLEGG, SEQ ID NO:104, DLWDWVVGKPAG SEQ ID NO:1, VELSGRGGLCTW SEQ ID NO:105, VIGAASHDEDVD SEQ ID NO:106, TIEPVLAEMFMG SEQ ID NO:107, DKETFELGLFDR SEQ ID NO:108, FSGVRGVYESRT SEQ ID NO:109, PDDAPMHSTRVE SEQ ID NO:110, STGLMVDFLEPG SEQ ID NO:91, AKTFGLEHGCEA SEQ ID NO:95, GGTVEVWSIKGG SEQ ID NO:115, DHFSQAGSSNHH SEQ ID NO:116, DDPVTPVIDFGK SEQ ID NO:117, AND RDGLIDFVVAGT SEQ ID NO:118.

9. The composition according to claim 1, wherein said peptido-mimetics are modified to enhance stability or enhance adhesion molecule binding.

10. A method of modulating binding of an adhesion molecule to a carbohydrate ligand, the method comprising contacting the adhesion molecule with a peptido-mimetic which corresponds to the carbohydrate ligand, wherein binding of the adhesion molecule to the carbohydrate ligand is modulated.

11. The method according to claim 10, wherein said adhesion molecule is a selectin.

12. The method according to claim 11, wherein said ligand is a Lewis antigen.

13. A method of modulating adhesion of a tumor cell to a binding partner, the method comprising contacting the tumor cell with a peptido-mimetic of a carbohydrate ligand, wherein the peptido-mimetic modulates adhesion of the tumor cell to the binding partner.

14. The method according to claim 13, wherein the binding partner is an adhesion molecule on an endothelial cell.

15. The method according to claim 14, wherein said adhesion molecule is a selectin.

16. The method according to claim 13, wherein said ligand is a Lewis antigen.

17. A method of treating cancer in a mammal, the method comprising administering an effective amount of a peptido-mimetic of a carbohydrate ligand to the mammal, wherein administration of the peptido-mimetic reduces adhesion of tumor cells to endothelial cells in the mammal, thereby reducing metastasis of the cancer.

18. The method according to claim 17, wherein said ligand is a Lewis antigen.

20. The method according to claim 17, wherein said tumor cells have an adhesion molecule or the surface of the cell.

21. The method according to claim 20, wherein said adhesion molecule is a selectin.

22. A method of inhibiting an inflammatory response in a mammal, the method comprising contacting an endothelial cell with an effective amount of a peptido-mimetic of a carbohydrate ligand.

23. The method according to claim 22, wherein said ligand is a Lewis antigen.

25. A method of identifying a peptido-mimetic of a carbohydrate ligand which affects the binding of the carbohydrate ligand to a binding partner, the method comprising the steps of:

(a) contacting the binding partner with a peptido-mimetic and

(b) comparing the binding of the binding partner of (a) to the carbohydrate ligand with the binding of the same binding partner which is not contacted with the peptido-mimetic to the carbohydrate ligand,

wherein a change in the level of binding of the binding partner contacted with the peptido-mimetic to the carbohydrate ligand compared with the level of binding of the binding partner not contacted with the peptido-mimetic with the carbohydrate ligand is an indication that the peptido-mimetic affects the binding of the carbohydrate ligand to the binding partner.

26. The method according to claim 25 wherein the binding partner is an adhesion molecule.

27. The method according to claim 26, wherein said adhesion molecule is a selectin.

28. The method according to claim 25, wherein said ligand is a Lewis antigen.

29. The method according to claim 25 wherein the carbohydrate ligand is located on the surface of a tumor cell and the binding partner is E-selectin, and wherein a change in the level of binding of the E-selectin contacted with the peptido-mimetic to the ligand on the tumor cell compared with the level of binding of the E-selectin which is not contacted with the peptido-mimetic to the ligand on the tumor cell is an indication that the peptido-mimetic affects the binding of the tumor cell to E-selectin.

30. A method of identifying a peptido-mimetic of a carbohydrate ligand which affects angiogenesis, the method comprising the steps of:

(a) contacting a primary capillary endothelial cell with a peptido-mimetic and

(b) comparing the capillary tube formation of the cell with the capillary tube formation of a primary capillary endothelial cell which is not contacted with the peptido-mimetic,

wherein a change in the level of capillary tube formation by the primary capillary endothelial cell contacted with the peptido-mimetic compared with the level of capillary tube formation by the primary capillary endothelial cells not contacted with the peptidomimetic is an indication that the peptido-mimetic affects angiogenesis.

31. The method according to claim 30, wherein the ligand is a Lewis antigen.

32. A method of identifying a peptido-mimetic which affects adhesion of a selected cell to an endothelial cell, the method comprising the steps of:

(a) contacting an endothelial cell with a peptido-mimetic of a carbohydrate ligand and

(b) comparing the binding of the endothelial cell (a) to the selected cell with the binding of an endothelial cell not contacted with said peptido-mimetic said selected cell,

wherein a change in the level of binding of the endothelial cell (a) to the selected cell compared with the level of binding of the endothelial cell not contacted with the peptido-mimetic to the selected cell, is an indication that the peptido-mimetic affects binding of the selected cell to the endothelial cell.

33. The method according to claim 32, wherein the selected cell is a tumor cell.

34. The method according to claim 33, wherein said endothelial cell is a human umbilical cord vein endothelial cell (HUVEC) and wherein said ligand is a Lewis antigen.

35. The method according to claim 32, wherein the selected cell is a neutrophil.

36. A method of identifying a peptido-mimetic of a carbohydrate ligand which inhibits or reduces the inflammatory process, the method comprising the steps of:

(a) administering an inflammation-inducing substance into a mammal,

(b) administering an effective inflammatory inhibiting dose of a peptido-mimetic of a carbohydrate ligand to said mammal, and

(c) comparing a characteristic of inflammation of the mammal receiving said peptido-mimetic with the same characteristic of inflammation in a control mammal which received only said inflammation-inducing substance,

wherein a significant difference in said characteristics of both mammals is an indication that the peptido-mimetic affects said inflammatory process.

37. The method according to claim 36, wherein said characteristic is neutrophil influx.

38. The method according to claim 36, wherein said characteristic is peroxidase activity.

39. The method according to claim 37, wherein a lower level of neutrphil influx in the mammal receiving said peptido-mimetic when compared to said control mamal, is an indication that the peptido-mimetic inhibits an inflammatory response.

40. The method according to claim 36, wherein said ligand is a Lewis antigen.

41. A method of producing peptido-mimetics of a Lewis antigen comprising the steps of:

(a) screening a random peptide library, the peptides expressed as fusion proteins on the surface of bacterial clones, with antibodies specific for a Lewis antigen or an E-selectin immunoglobulin fusion protein, and

(b) selecting clones which bind the antibodies or fusion protein, the clones producing peptido-mimetics of said Lewis antigen.

42. The method according to claim 17, wherein said peptido-mimetic is a peptido-mimetic of a carbohydrate ligand of an adhesion molecule in a physiologically acceptable carrier.

43. The method according to claim 22, wherein said peptidomimetic is a peptido-mimetic of a carbohydrate ligand of an adhesion molecule in a physiologically acceptable carrier.